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Abstract: Electronic power technology is one of the main basic technologies supporting the current high-tech industry and plays an important role in reform and traditional development. With the rapid development of electronic energy technology, its application scope is more and more wide, and has achieved good application effects, playing an important role in production and daily life. For the development of global electronic energy technology, we must pay attention to electronic components. As an important part of all electronic energy technology, it has great influence and significance on the development of global electronic energy technology. Therefore, this document discusses the application of electronic technology in China's energy system, and fully discusses and references related issues and solutions.

Keywords: Power Electronics; the Power System; Application

kōvt qf wēvkqp

High quality work in power systems has a significant impact on social progress. In order to effectively improve work quality and efficiency, investment in electronic technology is particularly important. Relevant departments attach great importance to it and formulate scientific work plans according to their own conditions. The electrical system must adopt electronic power technology. This paper mainly analyzes the application of electronic technology in the power system to provide corresponding support and guarantee for the follow-up high quality operation.

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Electronic technology reduces system failures through electronic component control systems, thus improving the operating efficiency and overall quality of the power grid. According to the important role of current power electronics technology, it can be divided into production technology and AC technology. In electronic power supply technology, power supply is its main application mode. Power monitoring reduces power grid faults and lowers subsequent maintenance. In addition, the grid operating system supports computer technology, and the proper application of electronic energy technology can transmit all kinds of energy-related data. After analyzing the data, the dispatching center must immediately formulate a reasonable system to ensure the stable operation of the power grid. At present, electronic power technology mainly has the characteristics of integration, high frequency and full control. Integration is supported by modern electronic technology, parallel processing of different equipment and reasonable integration and construction of electrical systems to ensure the independent and joint action of different components in the whole system. High frequency means that with the support of computer technology, the power loss of any equipment is reduced and the work efficiency is further improved. Full control is characterized by complete control and coordination of all computer equipment to ensure overall operational efficiency.

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With the continuous development of power technology in China, the application of power system is increasingly mature, but it needs to be emphasized that the stability and security of energy in the operation of power grid is the main factor to ensure the normal operation of power grid. Therefore, the relevant technical personnel must ensure the stability and security of the overall operation of the power grid, so as to further improve the overall power supply quality of the power system. In the traditional grid model, it is difficult to improve the energy quality because there is no measure to protect the transmission quality of the whole grid. In view of the emergence and wide application of electronic technology, the maximum power loss rate of the transmission system can be limited to the minimum in the process of DC transmission, so as to improve the transmission efficiency and realize the rational utilization of resources.

404 Rt qñkf g i wct cpvgg hqt r qy gt i tkf ugevt kñ

Power grid security is the fundamental guarantee of national economic development. China's energy system is still in its infancy, with much of the grid relatively simple. Especially in energy distribution and transmission, there is a certain gap with developed countries. China's geographical area is complex, the power grid is widely distributed, some areas often occur natural disasters, seriously affect the safety of power grids. Therefore, in power grid planning, these elements can artificially avoid the influence on power grid construction, bringing difficulties to power grid construction. In the application of electric power technology, the structure of power grid can be optimized to the maximum extent, and finally achieve the purpose of simplifying the structure of power grid.

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Wind, hydro, nuclear and solar power are common forms of power generation in China. Due to the relatively small proportion of geothermal and tidal energy, this paper will not be discussed. For example, in hydrogen and wind power, equipment associated with the energy production stage can be operated in a more reliable and stable manner through electronic-electric technology. The early use of water turbine is mainly based on the mechanical pressure of oil to achieve the change of speed, not only simple and reliable, but also can complete the change of basic speed. The technique was popular in the 19th century. At the same time, as the core technology of adjusting oil mechanical pressure, centrifugal swing technology consumes large power and has low efficiency. Frequency conversion technology can effectively reduce energy consumption, improve operating efficiency and maximize energy conversion rate. On the other hand, FM technology needs the support of FM technology. From the control effect, the overmodulation amount is large, the tone conversion is long, and the command signal is slow. Compared with mechanical drives, electrical drives do not have similar problems. At present, low voltage frequency conversion technology is relatively mature and development. There are many frequency conversion products on the market, which can effectively solve the problem of low efficiency of water pump operation in the process of hydropower production. Solar panels can generate about 20V direct current, in which case the thrust must be carried through thrust circuits in power electronics and converted to AC power. Microcomputers are used to monitor phase changes in the grid and adjust current output widths to reduce grid changes.

504 Ut gpñi vj gp vj g gpgti { /ucxkpi ghñev qh vj g uł uogo

Today, the use of modern electronic energy technology to help the power system to save energy has played a positive role in the green and sustainable development of society. Electricity use refers to the use of electronic

technology to operate electrical equipment to save resources, improve resource utilization, and meet the specific needs of social development for resources. From the perspective of business development, the application of electronic energy-saving technology can reduce the energy consumption cost of enterprises to a certain extent. From the human point of view, the application of automation technology in power system energy saving is essentially a humanized project. It can not only provide citizens with high quality energy services, but also reduce household electricity bills and provide a better electricity environment for people. For example, in terms of energy saving of air conditioning system, the electronic energy saving technology adopted by Samsung air conditioning shows very ideal energy saving performance on the basis of the initial air conditioning technology. Turbo (powerful air conditioning (heating) technology) enables fast and stable operation of air conditioners. Samsung air conditioners can use turbo to shorten the temperature setting by about 40 percent during the restart phase, and "return air conditioning" can also introduce a new strategy. The return air control system shall adopt an independent CNC air supply system, which can be adjusted according to the wind speed over time. In addition, the three-dimensional air supply system is transformed into the traditional wall-to-wall air conditioning mode, which increases the distance of air supply and improves the efficiency of air conditioning. The most important thing is the research and development of this technology, which can also be used in space, automobiles and other related fields.

505 Gpj cpegf vj g cr r decvqp qhvt cpuo kulqp ihpgu

The scientific application of electronic technology in the transmission line can significantly promote its high quality and stable activities, effectively make up for the shortage of transmission line activities, and further carry out relevant activities, which helps to rationalize the transmission line of the power system in the current social development process. The staff can introduce electric power technology scientifically and reasonably according to the actual needs, meet the actual and effective current work requirements in the application process, do a good job of connecting with transmission lines, and meet most needs in the development process of the new era. They must support stable long-term energy supplies, which can help to better facilitate and implement the work.

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The same technology as THE HVDC transmission system has many technical advantages, such as large AC transmission capacity, strong interference control ability, good stability, easy access to transmission networks of different transmission frequencies, etc. It has developed into a powerful high voltage AC transmission system integration technology in China, and is increasingly promoted in the world. In general, transistors need to be designed in three units: pulse activation, pulse amplification, protection and control of the flow inside the transistor. In the middle of the 20th century, a large capacity direct pulse transistor appeared in China. The pulse amplification signal can be directly contacted with the transistor transmitting the pulse amplification signal by optical fiber cable. The transistor control valve circuit is very simple. At present, with the rapid application and development of control system technology, computer network technology and optical fiber communication technology, the functions of new HVDC control system and security protection system are increasingly perfect. All the functions of the new control system can also be directly centralized on the new digital control platform, and remote-control parameters and other operations for each system can be easily set. This increases the functional redundancy of the system and ensures the normal operation and safety of the system. In addition, in order to effectively reduce the number of components in the main equipment of the system and improve the quality of the APF power supply system, more and more special electronic power devices are applied in the HVDC power supply system. Controllable active filter system is an electronic device whose working principle is to eliminate the effect of active harmonics by using controllable active power, so that the electronic device generates push current and transient voltage in front of the harmonic width of the traditional feed phase, which greatly replaces heavy active power filters.

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The development of electronic power systems will play an important role in the construction and development of domestic power systems. Therefore, people in related fields should actively study the effective application methods of electronic power technology and make contributions to the effective development of power system.

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